



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,457	12/27/2001	Dennis E. Smith	82987AEK	8364

7590

01/29/2003

Paul A. Leipold  
Patent Legal Staff  
Eastman Kodak Company  
343 State Street  
Rochester, NY 14650-2201

EXAMINER

AUGHENBAUGH, WALTER

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 01/29/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/033,457

Applicant(s)

SMITH ET AL.

Examiner

Walter B Aughenbaugh

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-40, drawn to a shaped article, classified in class 428, subclass 35.7.
  - II. Claim 41, drawn to a method of forming an article, classified in class 264, subclass 288.4.
2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by a materially different process such as the dispersal of microbeads in the first polymer phase without stretching the article.
3. During a telephone conversation with Chris Konkol on December 18, 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-40. Affirmation of this election must be made by applicant in replying to this Office action. Claim 41 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

Art Unit: 1772

currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

### *Specification*

7. The abstract of the disclosure is objected to due to the use of the word "which" (first occurrence of "which" in the third line of the abstract) and due to the use of legal phraseology used in the abstract such as "comprising".

Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### *Claim Rejections - 35 USC § 112*

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1772

9. Claims 1, 3, 14-17, 20-22, 33, 34 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "low-yellowing" in claim 1 is a relative term which renders the claim indefinite. The definition of "low-yellowing" provided in the specification (page 4, lines 27-28) does not explicitly explain the parameter used to determine the "low yellowing" condition. The initial and final points of the "change of  $b^*$  value toward yellowness" are not provided. The change over time, or some other variable? What is  $b^*$ ? What is  $b^*$  a measure of? The parameters under which the UV exposure is conducted are not provided (see specification, page 4, lines 27-28).

Claim 20 is indefinite for the same reasons provided above in the 35 U.S.C. 112 rejection to claim 1 in regard to " $b^*$ ".

In regard to claims 1 and 21, the term "which" in the second line of the claims in the phrase "which microbeads are bordered" is indefinite.

The term "substantially free" in claims 3 and 22 is a relative term which renders the claim indefinite. The term "substantially free" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "predominately" in claims 14, 15, 33 and 34 is a relative term which renders the claim indefinite. The term "predominately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Art Unit: 1772

Claims 16 and 34 are indefinite due to the inconsistency of the spelling of polyethylene terephthalate.

In regard to claim 39, the phrase “the shaped article is in the shape of...” is indefinite because the scope of the claim cannot be ascertained. Examiner suggests deleting “in the shape of”.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-7, 9-16, 21-26, 28-35 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Maier et al.

Maier et al. teach a shaped article such as a film, sheet, bottle, tube, fiber or rod having a continuous first polymer phase having dispersed therein microbeads of a crosslinked second polymer that are bordered by void space (col. 1, lines 15-19 and col. 7, line 1). The compositions taught by Maier et al. have superior thermal stability (col. 3, lines 9-11) and are free of the “yellowing with time” problem (col. 5, line 67-col. 6, line 2). Maier et al. teach that methyl methacrylate is a typical monomer for making the crosslinked second polymer for making the microbeads (col. 7, lines 47-49 and Examples 15-18 and 23-26, col. 17, lines 35-45); the monomers from which the second polymer is derived, methyl methacrylate, therefore, are substantially free of styrenic monomers (and therefore, contain less than 15 wt% styrenic monomers), in regard to claims 2, 3, 21 and 22.

In regard to claims 4-7 and 23-26, Maier et al. teach that methyl acrylate (in addition to methyl methacrylate) is a typical monomer for making the crosslinked second polymer for making the microbeads (col. 7, lines 47-51).

In regard to claims 9-12 and 28-31, Maier et al. teach that the microbeads have a size of about 0.1-50 micrometers, that the microbeads are present in an amount of about 5-50% by weight based on the weight of the first polymer and that the voids occupy about 2-60% by volume of the shaped article (col. 4, lines 60-65).

In regard to claims 13 and 32, Maier et al. teach that the polymeric microbeads are coated with a slip agent (col. 12, lines 51-53).

In regard to claims 14-16 and 33-35, Maier et al. teach that the first polymer is a polyester (col. 6, lines 12-17) or a polyolefin such as polypropylene (col. 6, lines 52-53). Maier et al. teach that poly(ethylene terephthalate), which may be modified by small amounts of other monomers, is especially preferred as the first polymer (col. 6, lines 44-46).

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 1772

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 18, 19, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al.

Maier et al. teach the shaped article as discussed above. Maier et al. fail to explicitly teach that the second polymer is derived from monomers comprising more than 20 wt% of crosslinking monomer. However, Maier et al. disclose an example where a monomer phase composed of 3317g of styrene, 1421g divinylbenzene (55%, i.e. about 781g, of which is crosslinking agent) and 45g of an initiator is prepared (col. 12, lines 64-68). The divinylbenzene percentage crosslinking agent makes up about 16% of the total mass of monomer phase  $((781\text{g}/4783\text{g}) * 100\% = \text{about } 16\%)$ . Maier et al. further disclose that the concentration of divinylbenzene can be adjusted up or down to result in about 2.5-50% crosslinking by the active cross-linker and that monomers other than styrene and divinylbenzene can be used in similar suspension polymerization processes known in the art (col. 13, lines 8-13). Maier et al. further disclose that preferred monomers for making the crosslinked polymer include styrene and methyl methacrylate (col. 7, lines 47-55). Maier et al. further disclose that the polymer of the microbeads is crosslinked to the extent of having a resiliency or elasticity at orientation temperatures of the matrix polymer such that a generally spherical shape of the crosslinked polymer is maintained after orientation of the matrix polymer (col. 4, line 68-col. 5, line 4 and col. 13, lines 21-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the concentration of the crosslinking monomer of Maier et al. via routine experimentation in order to achieve the optimal resiliency or elasticity at



Art Unit: 1772

orientation temperatures of the matrix polymer depending on the monomer used as the monomer from which the second polymer is derived and depending on the end user-result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

14. Claims 8 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Saito et al.

Maier et al. teach the shaped article as discussed above. Maier et al. fail to teach that the microbeads comprise a copolymer derived from methylmethacrylate and 1,6-hexanediol diacrylate or from methylmethacrylate and trimethylol propane triacrylate. Saito et al., however, disclose a transfer sheet having a thermally transferable protective layer (item 12, Figures 1-3) and optionally a protective layer (item 12a, Figure 3) having an acrylic resin to improve the fastness properties, such as rubbing fastness and scratch fastness, of the protective layer/s (col. 7, lines 17-27). Saito et al. disclose that methylmethacrylate, 1,6-hexanediol diacrylate and trimethylol propane triacrylate are suitable acrylic monomers (col. 7, lines 44-46 and col. 8, lines 25-26 and lines 34-35). Saito et al. disclose the use of the disclosed acrylic monomers as a mixture of two or more of the monomers; therefore, Saito et al. disclose the use of copolymers derived from methylmethacrylate and 1,6-hexanediol diacrylate or from methylmethacrylate and trimethylol propane triacrylate. Therefore, one of ordinary skill in the art would have recognized to have used a copolymer of methylmethacrylate and 1,6-hexanediol diacrylate or of methylmethacrylate and trimethylol propane triacrylate as the acrylic polymer of Maier et al. in

Art Unit: 1772

order to improve the fastness properties, such as rubbing fastness and scratch fastness, of the article of Maier et al. as taught by Saito et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a copolymer of methylmethacrylate and 1,6-hexanediol diacrylate or of methylmethacrylate and trimethylol propane triacrylate as the acrylic polymer of Maier et al. in order to improve the fastness properties, such as rubbing fastness and scratch fastness, of the article of Maier et al. as taught by Saito et al.

15. Claims 17 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Harrison et al.

Maier et al. teach the shaped article as discussed above. Maier et al. fail to teach that the article is a dye diffusion thermal transfer dye receiving sheet. However, Harrison et al. disclose a dye diffusion thermal transfer dye receiving element comprising a support comprising a continuous oriented polymer matrix having dispersed therein microbeads of a cross-linked polymer which are at least partially bordered by void space (col. 2, lines 23-31). Harrison et al. disclose that the dye-receiving element is shaped in sheet form (col. 9, lines 58-60). Therefore, one of ordinary skill in the art would have recognized to have used the shaped article of Maier et al. as a dye diffusion thermal transfer dye receiving sheet since it is notoriously well known to use the shaped article of Maier et al. as a dye diffusion thermal transfer dye receiving sheet as taught by Harrison et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the shaped article of Maier et al. as a dye diffusion thermal transfer dye

Art Unit: 1772

receiving sheet since it is notoriously well known to use the shaped article of Maier et al. as a dye diffusion thermal transfer dye receiving sheet as taught by Harrison et al.

16. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Narita et al.

Maier et al. teach the shaped article as discussed above. Maier et al. fail to teach that the  $\Delta b^*$  for one week simulated high intensity sunlight (50 Klux) testing is not more than 0.2. Narita et al., however, disclose a receptor layer of a thermal transfer-receiving sheet in which the  $\Delta b^*$  value is tailored to be from -5 to 5, inclusive of .5 and 5 (col. 10, lines 45-62). Narita et al. teach that by appropriately incorporating coloring materials such as pigments, dyes and fluorescent whitening agents, the desired color is produced to match the color of the corresponding printing paper (col. 10, lines 36-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimal amounts and types of coloring materials to add to the second polymer via routine experimentation in order to minimize yellowing to a degree depending on the end user-result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

17. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Hart et al.

Maier et al. teach the shaped article as discussed above. Maier et al. fail to teach that the shaped article is coated with a slip agent comprising silica or alumina. Hart et al., however, disclose a thermal transfer printing receiver sheet (col. 3, lines 6-7) that is coated with a coating that contains a silica slip agent to improve the slip, anti-blocking and general handling

Art Unit: 1772

characteristics of the sheet (col. 9, lines 37-51). Therefore, one of ordinary skill in the art would have recognized to have coated the article with a slip agent in order to improve the slip, anti-blocking and general handling characteristics of the article as taught by Hart et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have to have coated the article with a slip agent in order to improve the slip, anti-blocking and general handling characteristics of the article as taught by Hart et al.


### *Conclusion*

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

wba  
01/23/03 WBA

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1/24/03